Collection of Shallow Soil Samples for Perfluorooctanoic Acid (PFOA) and Perfluorinated Compounds (PFCs) Protocol

General

The objective of this protocol is to give general guidance for the collection of soil samples for PFC analysis. The sampling procedure used must be consistent with the NYSDEC March 1991 SAMPLING GUIDELINES AND PROTOCOLS http://www.dec.ny.gov/regulations/2636.html with the following materials limitations.

Laboratory Analysis and Container

Samples collected using this protocol are intended to be analyzed for PFOA and other PFCs by Modified (Low Level) via Test Method **PFC-IDA**. Based on four laboratories, the PFC reporting limits range from 0.1 to 3 micrograms per kilogram. One 8 ounce high density polyethylene (HDPE) container is required for each sample. Pre-cleaned sample containers, coolers, sample labels and a chain of custody form will be provided by the laboratory.

Sampling Location and Survey

Shallow soil sampling will generally be confined to surface or near-surface soils and/or sediments with hand equipment. For screening purposes, sampling of this type should be conducted in depositional areas. Sample locations shall be located and recorded.

Equipment

At this time acceptable materials for sampling include: stainless steel, HDPE and polypropylene. Additional materials may be acceptable if proven not to contain PFCs. All sampling equipment components and sample containers should not come in contact with aluminum foil, low density polyethylene (LDPE), glass or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer. A list of acceptable equipment is provided below, but other equipment may be considered appropriate at a later date.

- ☐ stainless steel spoon
- ☐ stainless steel bowl
- ☐ carbon steel hand auger without any coatings

Equipment Decontamination

Standard two step decontamination using detergent and clean water rinse should be considered for equipment that does come in contact with PFC materials.

Sampling Techniques

Sampling is often conducted in areas where a vegetative turf has been established. In these cases a clean stainless steel spoon should be used to carefully remove the turf so

that it may be replaced at the conclusion of sampling. Surface soil samples (e.g. 0 to 6 inches below surface) shall then be collected using a pre-cleaned, stainless steel spoon. Shallow subsurface soil samples (e.g. 6 to ~36 inches below surface) may be collected by digging a hole using a hand auger. When the desired subsurface depth is reached, a pre-cleaned hand auger shall be used to obtain the sample.

When the soil sample is obtained, it should be deposited into a stainless steel bowl for mixing prior to filling the sample containers. The soil should be placed directly into the bowl and mixed thoroughly by rolling the material into the middle until the material is homogenized.

Sample Identification and Logging

A label shall be attached to each sample container with an identification consistent with the format indicated below. Each sample shall be included on the chain of custody (COC).

- Each sample shall be labelled as Street#, Street Name, date, Sample S#, Depth Interval (e.g. 2MainSt-3-30-16-S1-0-2).
- Each duplicate shall be labelled as a blind duplicate identified as "date, DUP, # (e.g. 3-30-16-DUP1).

Quality Assurance/Quality Control

- Immediately place samples in cooler maintained at 4 ± 2° Celsius.
- Collect one field duplicate for every sample batch, not to exceed 20 samples. The duplicate shall consist of an additional sample at a given location.
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, not to exceed 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC.
- Request appropriate data deliverable (Category A or B) and an electronic data deliverable.

Documentation

A soil log or sample log shall document the location of the sample/borehole, depth of the sample, duplicate sample, visual description of the material and any other observations or notes determined to be appropriate.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler must wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFC materials must be avoided. All clothing worn by sampling personnel must have been laundered multiple times.